

CLAIMS

1. A method of producing an optical fiber preform comprising an inner core region and an outer cladding region, the method comprising
- 5 a) providing a fiber preform tube predominantly of silica, the tube having an inner core zone of a core material and an outer cladding zone, the inner zone defining an inner surface of the tube, the core material comprising at least one dopant selected from the group consisting of aluminum oxide, germanium oxide and erbium oxide, and
- 10 b) depositing a protective layer of a light-transmissive material of higher viscosity than the core material, on the inner surface of the preform tube over the core material.
2. The method of claim 1 wherein the at least one dopant is erbium oxide.
3. The method of claim 1 wherein the at least one dopant is aluminum oxide.
4. The method of claim 1 wherein the step b) is effected by modified chemical vapor deposition.
5. The method of claim 1 further comprising the step of controlled heating of the preform tube after step b) to effect a collapse of the preform tube.
6. A method of manufacturing an optical fiber from a preform based on silica, the method comprising the steps of, in sequence:
- 5 providing a fiber preform tube predominantly of silica, the tube having an inner zone and an outer zone, the inner zone defining an inner surface of the tube, the inner zone comprising at least one dopant selected from the group consisting of aluminum oxide, germanium oxide and erbium oxide,

- depositing at least one layer of a silica-based material on the inner surface of the tube over the doped inner zone of the preform tube,
- 10 controllably heating the preform tube to create a preform with a reduced diameter compared to the preform tube, and
- hot-drawing fiber from the preform.

7. An optical fiber preform tube based on silica and comprising an inner core zone and an outer cladding zone, the inner zone being of a light-transmissive core material comprising at least one dopant selected from the group consisting of aluminum oxide, germanium oxide and erbium oxide,
- 5 wherein the tube further comprises a protective layer of a light-transmissive material of a viscosity higher than the viscosity of the core material, contiguous with and disposed concentrically inside the inner zone of the tube.

8. The preform tube of claim 7 wherein the at least one dopant is alumina.

9. The preform tube of claim 7 wherein the material of the protective layer is predominantly silica

10. The preform tube of claim 7 wherein the thickness of the protective layer is such as to at least alleviate viscosity-reducing effect of the at least one dopant during a thermal treatment of the preform tube.

11. The preform tube of claim 8 wherein the thickness of the protective layer is such as to at least alleviate viscosity-reducing effect of alumina during a thermal treatment of the preform tube.

12. The preform tube of claim 7 wherein the thickness of the protective layer is such as to avoid or minimize occurrence of a rapid reduction of the refractive index of the core material.

13. The preform tube of claim 9 wherein the thickness of the protective layer is in a range of 5 to 20 μm .

14. The preform tube of claim 7 wherein the protective layer is the innermost layer of the preform tube.

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